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| 10/808,656      | 03/24/2004  | Michael A. Rothman   | 42P16428X           | 6115             |

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| EXAMINER |
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SHIU, HO T

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2457

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                                      |                                       |  |
|------------------------------|--------------------------------------|---------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/808,656 | <b>Applicant(s)</b><br>ROTHMAN ET AL. |  |
|                              | <b>Examiner</b><br>HO SHIU           | <b>Art Unit</b><br>2457               |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 April 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-17, 19 and 20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17, 19 and 20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>06 April 2009</u> .   | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. Claims 1-17, and 19-20 are pending in this application. Claims 1, 4, and 14 have been amended and claim 18 has been cancelled by applicant filed on 04/06/2009.

#### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1, 4, and 14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

5. With respect to claim 1, the claim recites "wherein the first and second firmware utilize an Extensible Firmware Interface (EFI) framework to perform the method for sharing an input device across the plurality of computing platforms." There is no mention in the specification that the Extensible Firmware Interface is solely responsible

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to perform the method of sharing devices across a plurality of computing platforms. The examiner notes that according to applicant's specification PG Pub [0039], "In one embodiment, the resource sharing is facilitated via an extensible firmware framework known as Extensible Firmware Interface (EFI)." However, this states that the resource sharing is done by way of Extensible Firmware Interface which is different than stating that the extensible firmware interface is responsible for all the limitations in the claims.

6. With respect to claims 4 and 14, since they are similarly in scope, it is rejected for the same reasons as claim 1 above.

7. Claims 1, 4, and 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. With respect to claims 1, 4, and 14, applicant claims that the Extensible Firmware Interface (EFI) is responsible to perform the method. However, according to applicant's PG Pub [0039], it states that the resource sharing is facilitated via an extensible framework known as EFI. Therefore, it is unclear what the applicant is trying to claim. For examination purposes, claims 1, 4, and 14 will be understood as wherein the first and second firmware utilize an EFI to facilitate the method for sharing. Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. **Claims 1-8, 11-15, and 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leigh et al. (Pub # US 2003/0088655 A1, hereinafter Leigh) in view of view of Odryna et al. (US Pub # 2002/0143996, hereinafter Odryna) and in further view of Bramley, Jr. (US Patent # 6,889,340, hereinafter Bramley) and in further view of Chrysanthakopoulos et al. (US Patent # 7,343,441 B1, hereinafter Chrys)**

11. With respect to claim 1, Leigh discloses sharing an input device across a plurality of computing platforms, comprising: ([0028], lines 3-5, [0029], lines 1-4, lines 8-10) routing input data generated at a first server blade to a second server blade, said input data generated in response to receiving an input signal produced by an input device coupled to a first server blade ([0030], lines 5-11); and providing the input data to an operating system running on the second server blade ([0036], lines 1-8, [0037], lines 13-15).

Although Leigh discloses multiple LMC as communication to extract information such as signals for keyboard, mouse, power button, etc. and multiple KVM as a prior art which is used to connect to a set of console devices including keyboard, video monitor,

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and mouse which are used to input data to the first and second server blades ([0036], [0037]), but Leigh does not explicitly state that wherein routing input data to the first and second server blades and providing the input data to the operating system are performed via a first firmware and a second firmware on the first and second server blades, respectively, wherein the first and second firmware utilize an Extensible Firmware Interface (EFI) framework to perform the method for sharing an input device across the plurality of computing platforms.

In the same field of endeavor, Odryna discloses in fig.2 and 3 and [0010] that the KVM switch is connected in a daisy chain which permits a single operator at a time to reach all the servers. Since Leigh discloses a KVM interface card daisy-chained with respect to the same way as the LMC controllers and Odryna discloses the KVM switches being daisy chained, it would have been obvious to one of ordinary skill in the art to incorporate the teachings of Leigh with providing the input data to an operating system running on the second server blade as taught in Odryna in order to utilize the LMC in such a way like the KVM for a hardware input device connected to a KVM/LMC to talk to an operating system or software of any kind to utilize firmware to identify and initialize system components. One of ordinary skill in the art would have been motivated to incorporate these teachings with one another in order to be able to minimize the amount of cabling in a server rack.

However, Leigh and Odryna disclose the sharing of data using KVM and LMC cards, they do not clearly disclose providing the input data to the operating system are performed via a first firmware and a second firmware on the first and second server

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blades, respectively, wherein the first and second firmware utilize an Extensible Firmware Interface (EFI) framework to perform the method for sharing an input device across the plurality of computing platforms.

In the same field of endeavor, Bramley discloses that an EFI device driver is an application that is written to run under the Extensible Firmware Interface that are used to handle a video display, one for a keyboard, and one for the serial ports and so forth. The EFI driver is selectable by a boot manager that is part of the BIOS (col. 3, lines 15-567). Although Bramley states that there are many EFI drivers that are used, one to handle a video display, one for a keyboard, and one for the serial ports and so forth, it would have been obvious one of ordinary skill in the art to modify the EFI drivers into one EFI driver in order to minimize the number of files. One of ordinary skill in the art would have been motivated to modify the teachings of Bramley since it is simple a design choice.

Therefore, it would have been obvious to one of ordinary skill in the art to incorporate the teachings of Leigh and Odryna whom clearly disclose sharing data across computing platforms with providing the input data to the operating system are performed via a first firmware and a second firmware on the first and second server blades, respectively, wherein the first and second firmware utilize an Extensible Firmware Interface (EFI) framework to perform the method for sharing an input device across the plurality of computing platforms as taught in Bramley in order to execute operating system commands. One of ordinary skill in the art would have been motivated to incorporate these teachings with one another in order to develop a ROM-

based operating system that is stored in the flash memory that provides disk operating system functionality for the computer system.

In the same field of endeavor, Chrys discloses a basic input/output system (BIOS) (or other firmware model, such as the so called Extensible Firmware Interface) containing the basic routines that help to transfer information between elements within the computer 100 (Fig. 1, elements 101, 102,).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the teachings of Leigh, Odryna, and Bramley to incorporate firmware with respect to the input data with the teachings of Chrys pertaining to the BIOS which helps transfer information between elements within a computer in order to appropriately access fundamental hardware components upon computer start-up.

12. With respect to claim 2, Leigh discloses firmware in a manner that is transparent to the operating system running on the second server blade. ([0030], lines 25-30, [0036], lines 1-8, [0037], lines 13-15).

13. With respect to claim 3, Leigh discloses the input device comprises one of a keyboard and mouse ([0037], lines 6-9).



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14. With respect to claim 5, Leigh discloses facilitated by firmware stored on each of the resource host and target server blades ([0030], lines 5-11).

15. With respect to claim 6, Leigh discloses maintaining global resource mapping information identifying the resource host and the target server blades ([0028], lines 5-14, [0029], lines 1-10).

16. With respect to claim 7, Leigh discloses a local copy of the global resource mapping data on each of the plurality of server blades ([0028], lines 5-14, [0032], lines 6-8).

17. With respect to claim 8, Leigh discloses maintaining the global resource mapping data via a central global resource manager ([0028], lines 5-14, [0029], lines 1-10).

18. With respect to claims 4 and 14, they are of similar claims as claim 1. Therefore, it is rejected for the same reasons as claim 1 above.

19. With respect to claim 11, Leigh discloses the plurality of server blades comprise a plurality of server blades operate in a blade server environment ([0011], lines 13-16).

20. With respect to claim 12, Leigh discloses the method is performed in a manner that is transparent to operating systems running on the plurality of server blades ([0030],

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lines 25-30, [0036], lines 1-8, [0037], lines 13-15).

21. With respect to claim 13, Leigh discloses facilitated by firmware running on each of the plurality of server blades ([0030], lines 25-30).

22. With respect to claim 15, Leigh discloses instructions comprise firmware instructions ([0030], lines 5-11).

23. With respect to claim 17, Leigh discloses the operations are performed in a manner that is transparent to the operating system running on the second server blade ([0036], lines 1-8, [0037], lines 13-15).

24. With respect to claim 19, it is rejected for the same reasons as claim 1 above. In addition, Chrys discloses wherein the first and second firmware runs in the pre-boot prior to operating system load (col. 3, lines 35-40).

25. With respect to claim 20, Leigh and Chrys do not clearly disclose wherein the first and second firmware runs during runtime of the operating system.

However, it would have been obvious to one of ordinary skill in the art at the time the invention was made where the first and second firmware runs during runtime of the operating system to be able to recognize what the hardware device is communicating to

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a software while the operating system is running.

**26. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leigh in view of obviousness and in further Chrys as applied to claim 4 and in even further view of Bigelow et al. (US Pub # 2004/0128562 A1, hereinafter Bigelow).**

27. With respect to claim 9, Leigh, Odryna, Bramley, and Chrys does not disclose the user input and video data are routed over an out-of-band communication channel.

In the same field of endeavor, Bigelow discloses where the user input and video data are routed over an out-of-band communication channel ([0036], lines 1-7, [0037], lines 10-14).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the teachings of Leigh, Odryna, Bramley, and Chrys with where the user input and video data are routed over an out-of-band communication channel as taught in Bigelow in order to provide communication between the management modules and the switch modules. One of ordinary skill in the art would have been motivated to incorporate the teachings with one another to establish a communication outside of a previously established communication method or channel.

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28. With respect to claim 10, Leigh does not disclose the OOB communication channel comprises one of a system management bus, an Ethernet-based network, or a serial communication link.

In the same field of endeavor, Bigelow discloses the OOB communication channel comprises one of a system management bus, an Ethernet-based network, or a serial communication link. ([0037], lines 10-14).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the teachings of Leigh, Odryna, Bramley, and Chrys with the OOB communication channel comprises one of a system management bus, an Ethernet-based network, or a serial communication link as disclosed in Bigelow in order to provide communication between the management modules and the switch modules. One of ordinary skill in the art would have been motivated to incorporate the teachings with one another to establish a communication outside of a previously established communication method or channel.

**29. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Leigh, obviousness and Chrys as applied to claim 14 in view of DeCaprio et al. (US Patent # 7,114,180 B1, hereinafter DeCaprio).**

30. With respect to claim 10, Leigh, Odryna, Bramley, and Chrys do not clearly disclose the article comprises a flash device.

In the same field of endeavor, DeCaprio discloses the article comprises a flash device (Column 5, lines 50-57).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the teachings of Leigh, Odryna, Bramley, and Chrys with the article comprises a flash device as taught in DeCaprio in order to store information such as computer readable instructions, data structures, program modules, or other data. One of ordinary skill in the art would have been motivated to incorporate the teachings with one another to efficiently erase and reprogram memory and maintain information without the need of power.

### ***Response to Arguments***

31. Applicant's arguments with respect to claims 1-17, and 19-20 have been considered but are moot in view of the new ground(s) of rejection.

32. According to applicant's arguments on page 7, applicant's argue that Leigh does not disclose a firmware and that the examiner concedes that Leigh does not disclose a firmware. The examiner disagrees as the examiner state that Leigh does not explicitly discloses routing input data to the first and second server blades. However, Leigh already disclosed routing information from one server blade to another server blade by using a KVM or LMC. One of ordinary skill would have known that keyboard, video, and mouse utilize BIOS which is a boot firmware designed to be the first code run by a

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system when powered on. The success of sharing information via daisy chain has already been established by Leigh and not cited prior art Odryna. Bramley and Chrys are used to cure what Leigh and Odryna does not teach explicitly that they are using an EFI firmware to be able to use the KVM switch/module.

33. Applicant's also argued that the Examiner has failed to make a prima facie showing of obviousness in view of the alleged lack of explicit recitation of predictability/expectation of success of the prior art combination.

Applicant argued that the Examiner has failed to make a prima facie showing of obviousness under the USPTO Examination Guidelines for Determining Obviousness in view of KSR (Fed. Register, Vol. 72, No. 195). Applicant alleges that "*These KSR Guidelines enumerate permissible rationale and the findings of fact that must be made under the particular rationale.*" While the KSR Guidelines provide a non-exhaustive listing of exemplary rationales, the USPTO Examination Guidelines for Determining Obviousness in view of KSR explicitly states "*These guidelines do not constitute substantive rule making and hence do not have the force and effect of law. They have been developed as a matter of internal Office management and are not intended to create any right or benefit, substantive or procedural, enforceable by any party against the Office. Rejections will continue to be based upon the substantive law, and it is these rejections that are appealable. Consequently, any failure by Office personnel to follow the guidelines is neither appealable nor petitionable.*" The Examiner notes that again, Applicant appears to be attempting to limit the Office's conclusion of obviousness to a non-exhaustive list of exemplary rationales, of which Applicant's analysis is contrary to the conclusion of obviousness found in the

Office Action dated 4/22/2008 (as well as the Final Rejection dated 7/25/2008). For at least this reason, Applicant's arguments are not found to be persuasive.

34. Applicant's allegations that:

(1) *"If a combination or modification to a reference is used, an Examiner must show that there is an expectation of success that the combination or modification proffered would predictably result in the claimed invention."*; and

(2) *"Thus, the burden still remains on the Examiner to demonstrate each prong of the three-part test: (1) that each and every element is taught; (2) that one skilled in the art could have combined the references; and (3) that there is predictability/expectation of success."*, appear to contradict MPEP 706.02(j) by stating that the content of a rejection under 35 USC 103(a) must include a statement showing that there is an expectation of success that the combination or modification would predictably result in the claimed invention.

### **Conclusion**

35. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

36. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HO SHIU whose telephone number is (571)270-3810. The examiner can normally be reached on Mon-Thur (8:30am - 4:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on 571-272-4001. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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07/10/2009

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